

Due Date: July 12, 2004

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

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JUL 09 2004

In re Application of:

Inventor: David M. Siefert

Serial #: 09/003,000

Filed: January 5, 1998

Title: SELECTING TEACHING STRATEGIES  
SUITABLE TO STUDENT IN  
COMPUTER-ASSISTED EDUCATION

Examiner: Samuel G. Rimell

Group Art Unit: 2175

Appeal No.: \_\_\_\_\_

**OFFICIAL**

**BRIEF OF APPELLANT**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In accordance with 37 CFR §1.192, Appellant's attorney hereby submits the Brief of Appellant, in triplicate, on appeal from the final rejection in the above-identified application as set forth in the Office Action dated February 12, 2004.

Please charge the amount of \$330.00 to cover the required fee for filing this Appeal Brief as set forth under 37 CFR §1.17(c) to Deposit Account No. 50-1673 of NCR Corporation, the assignee of the present application. Also, please charge any additional fees or credit any overpayments to Deposit Account No. 50-1673.

**I. REAL PARTY IN INTEREST**

The real party in interest is NCR Corporation, the assignee of the present application.

**II. RELATED APPEALS AND INTERFERENCES**

There is a related appeal for Application Serial No. 08/813,714, filed March 7, 1997, which is

a continuation application of Application Serial No. 08/217,065, filed on March 24, 1994, which is a parent patent application for the present application.

There is a related appeal for Application Serial No. 08/813,730, filed March 7, 1997, which is a continuation application of Application Serial No. 08/217,065, filed on March 24, 1994, which is a parent patent application for the present application.

### III. STATUS OF CLAIMS

Claims 16, 17 and 19-22 are pending in the application.

Claims 16, 17, 19, 20, and 22 were rejected as being anticipated under 35 U.S.C. §102(a) in view of Lee, WO 93/16454 (Lee).

Claim 21 was rejected as being unpatentable under 35 U.S.C. §103(a) in view of Lee, and these rejections are being appealed.

### IV. STATUS OF AMENDMENTS

An amendment under 37 C.F.R. §1.116 was submitted on April 8, 2004 in response to the final Office Action, wherein the amendment canceled claim 18. An Advisory Action mailed April 22, 2004 entered the amendment for the purposes of appeal.

### V. SUMMARY OF THE INVENTION

Appellants' invention, as recited in independent claim 16, is directed to a method of presenting material on a same topic to a learner, comprising:

(a) storing on one or more computers a plurality of materials including a collection of alternate presentations, each covering the same topic;

(b) providing a communications link to the materials, via a data channel, with a communicator of the learner;

(c) storing profiles of learners, which contain information about characteristics of each learner including information about each learner's curriculum, teaching strategies, present standing and personalized information;

(d) selecting a preferred presentation from the collection of alternate presentations based on the learner's profile; and

(e) making the selected presentation to the learner.

With regard to the claims, Appellant's attorney requests that the Board refer to the specification generally. Specific portions of the specification that directly relate to the claims on appeal include:

- (a) at page 3, line 13 through page 6, line 15, and in FIG. 1;
- (b) at page 7, lines 1-12;
- (c) at page 11, line 16 through page 14, line 32;
- (d) at page 15, line 5 through page 18, line 15;
- (e) at page 18, lines 16-36; and
- (f) at page 31, lines 5-6, and in FIGS. 2-4.

#### VI. ISSUES PRESENTED FOR REVIEW

1. Whether claims 16, 17, 19, 20, and 22 are anticipated under 35 U.S.C. § 102(a) by Lee, WO 93/16454 (Lee).

2. Whether claim 21 is rendered obvious under 35 U.S.C. §103(a) by Lee, WO 93/16454 (Lee).

#### VII. GROUPING OF CLAIMS

The rejected claims do not stand or fall together. Separate arguments for each of the claims are provided below.

#### VIII. ARGUMENTS

##### A. The Office Action Rejections

On page (2) of the Office Action, claims 16, 17, 19, 20, and 22 were rejected under 35 U.S.C. §102(a) as being anticipated by Lee, WO 93/16454 (Lee). On page (4) of the Office Action, claim 21 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lee.

Appellant's attorney respectfully traverses these rejections.

### B. The Appellant's Independent Claim

Independent claim 16 is directed to a method of presenting material on a same topic to a learner, comprising:

- (a) storing on one or more computers a plurality of materials including a collection of alternate presentations, each covering the same topic;
- (b) providing a communications link to the materials, via a data channel, with a communicator of the learner;
- (c) storing profiles of learners, which contain information about characteristics of each learner including information about each learner's curriculum, teaching strategies, present standing and personalized information;
- (d) selecting a preferred presentation from the collection of alternate presentations based on the learner's profile; and
- (e) making the selected presentation to the learner.

### C. The Lee Reference

Lee describes an educational method and system for executing the method, to improve the efficiency of individual learning by monitoring the student's progress and pacing the course material to the student's ability to comprehend and learn. This method and system also reduces the teacher's administrative and paperwork burden. Interactive multimedia technology is combined with unique courseware development to provide a flexible teaching tool and student monitoring system.

### D. The Appellant's Claims Are Patentable Over The References

Appellant's invention, as recited in independent claim 16, is patentable over the references, because the claim recites limitations not found in the references.

Nonetheless, the Office Action cites Lee at page 8, line 29, page 8, lines 34-35, page 12, lines 8-10, page 6, line 37 through page 7, line 3, and page 7, lines 29-32 as teaching the limitations of the independent claim.

The Office Action rejections are set forth in more detail below:

Claims 16, 17, 19, 20 and 22 are rejected under 35 U.S.C. 102(a) as being anticipated by Lee (WO 93/16454).

Claim 16: Lee discloses a plurality of computers (10, 40, 44) which form a LAN system. The system stores a plurality of materials on different topics, as well as profiles of learners. The LAN forms a communications link with a data channel that connects students at workstations (10) to a teacher's workstation (40). The profiles of learners are stored in the system. These profiles include the learner's curriculum ("homework assignments", page 8, line 29); teaching strategies ("how much and what type of material each student can access", page 8, lines 34-35); present standing ("results of homework assignments", page 8, line 29 and page 12, lines 8-10) and personalized information ("student name and ID", page 8, line 26). Learning presentations are selected based on these profiles (page 6, line 37 through page 7, line 3) and selected presentations are presented to the users. The presentations themselves can be alternate presentations on the same topic (page 7, lines 29-32). The alternate presentations can be text, illustrations and questions, as well as different lesson lengths.

Claim 17: The information about the learner's curriculum is described at page 8, line 29. This information is the result of homework assignments. These results determine the learner's needs and the curriculum is matched to these needs (page 8, line 36- page 9, line 2).

Claim 19: The student can designate preferences for the preferred teaching strategies (page 9, line 22 and lines 26-31). These preferences can dictate the selection of preferred learning programs.

Claim 20: The present standing of the student (homework results in the form of grades) are obtained in a non-intrusive manner. Namely, the grades are sent electronically to the instructor (page 12, lines 8-10).

Claim 22: The personalized information includes the student name and ID number (Page 8, line 26). This information facilitates learning, since the teacher would be incapable of even communicating with the students without having such information.

The Office Action rejections also include the following:

Claim 21 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Lee (WO 93/16454).

Lee discloses the concept of identifying subject matter that the student is having problems with, and sending a message to the teacher regarding this subject matter (page 12, line 35 through page 13, line 1). However, Lee does not explicitly state that such information is actually recorded in the student profile. It would have

been obvious to one of ordinary skill in the art to modify Lee to record such information as a choice of stored data.

Finally, the Office Action states the following:

With respect to the application of the reference to Lee, applicant argues that Lee does not disclose the concept of having alternate presentations on the same topic, and selecting one of the alternates based on a learner's profile information. Examiner maintains that Lee discloses both features. Alternate presentation styles for any given topic are described at page 7, lines 29-31. Selection of material based on the learner's profile information is described at page 6, line 37 through page 7, line 3. Further discussion of these features are provided at page 8, lines 1-9.

Appellant's attorney disagrees with this analysis. The above portions of Lee do not teach or suggest all the limitations of Appellant's independent claim. Specifically, the indicated locations in Lee do not teach or suggest the limitations "storing profiles of learners, which contain information about characteristics of each learner including information about each learner's curriculum, teaching strategies, present standing and personalized information; selecting a preferred presentation from the collection of alternate presentations based on the learner's profile; and making the selected presentation to the learner." Instead, the indicated locations in Lee merely set forth the following:

Lee: page 8, line 25 through page 9, line 2

The homework answers are stored in database files corresponding to each student name and ID number in the hard drive at the teachers station for future use.

The teacher and/or a system program can then use the results of the homework assignments in conjunction with each student's progress, which has been stored in another database file at the end of the previous day, to assign lesson segments to each student as the process flow continues to block 130. This assignment process allows the teacher and/or a system program to determine how much and what type of material each student can access for a given period of time, and provides the first of several opportunities for the teacher and/or system program to tailor each student's individual learning program.

Lee: page 11, line 31 through page 12, line 10

After a lesson segment has finished being presented, the control flow according to this exemplary embodiment of the present invention goes from decision block 154 to block 180 which executes a quiz subroutine illustrated in more detail in Figure 4. At the end of each lesson segment, which can be designed at the courseware level to be of an optimal attention span length for the intended grade level of the student, typically there will be a series of questions retrieved from a

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database of questions associated with the particular lesson segment for the student to answer at block 182, The student enters his or her responses via the keyboard and the workstation CPU compares these responses to the correct answers stored in the database at blocks 184 and 186, If desired, a grade on the student's responses can be generated and transmitted to the teacher's station for storage in the student's file.

Lee: page 6, line 35 through page 7, line 16

Initially, one advantageous feature of the educational method according to the present invention is that courseware can be uniquely developed for each class, school, school system or any other segment of a student population so as to provide a curriculum desired by the educators using the system and method of the present invention. The term "courseware" as used throughout this specification is meant to comprise the combination of control programs and data which provide each lesson to the student at a workstation and includes, for example, both the information stored on the hard drive, laser disk, and CD-ROM, as well as that input through the TV input module, and the programmed presentation of that data. The phrase "lesson segment" is used to denote a block of material presented to a student which is intended to be viewed and interacted with in one sitting, typically 15-40 minutes. A lesson segment can also be a test which evaluates the student's retention of one or more lesson segments or a whole semester's worth of material.

Lee: page 7, lines 29-36

Thus the teacher or school system can select material including, for example, text, illustrations, length of lesson and questions to be answered, to comprise the courseware for any subject. This courseware development step in the educational method according to the present invention advantageously provides teachers and parents with the opportunity to create and update the educational material for presentation to the students.

The above portions of Lee relate only to the use of homework assignments in conjunction with each student's progress to assign lesson segments to each student. Contrary to the assertion in the Office Action, the storing and use of homework assignments does not comprise the limitations "storing profiles of learners, which contain information about characteristics of each learner including information about each learner's curriculum, teaching strategies, present standing and personalized information," as recited in Appellant's claims. For example, nowhere are teaching strategies described in Lee. Indeed, it would only be with hindsight that the Office Action can make the assertion that the statement from Lee directed to "how much and what type of material each student can access" describes information about each learner's teaching strategies.

Thus, Appellant's attorney submits that independent claim 16 is allowable over the Lee reference. Further, dependent claims 17 and 19-22 are submitted to be allowable over the reference

in the same manner, because they are dependent on independent claim 16; and thus contain all the limitations of the independent claim. In addition, dependent claims 17 and 19-22 recite additional novel elements not shown by the reference.

With regard to claim 17, which recites that "the information about each learner's curriculum substantially determines each learner's needs and the step of selecting the preferred presentation from the collection includes matching the learner's needs with the preferred presentation suited to those needs," the Office Act cites Lee at page 8, line 36 through page 9, line 2 as teaching these limitations. Appellant's attorney disagrees. These portions of Lee merely describe homework assignments, which are not a learner's curriculum.

With regard to claim 19, which recites that "the information about each learner's teaching strategies includes information on the learner's preferred teaching strategy and the step of selecting the preferred presentation includes selecting the preferred presentation according to the learner's preferred teaching strategy," the Office Act cites Lee at page 9, line 22 and lines 26-31 as teaching these limitations. Appellant's attorney disagrees. These portions of Lee merely describe the selection of lesson segments and the like, but they do not teach or suggest information on the learner's preferred teaching strategy that is stored in a profile and used to select a preferred presentation.

With regard to claim 20, which recites that "the information about each learner's present standing is ascertained in a non-intrusive, transparent manner, based on a demonstration of a level of competency by the learner," the Office Act cites Lee at page 12, lines 8-10 as teaching these limitations. Appellant's attorney disagrees. These portions of Lee merely describe generating a grade on a student's response, but they do not teach or suggest the limitations of claim 20.

With regard to claim 21, which recites that "the personalized information includes information about difficulties in teaching the learner," the Office Act cites Lee at page 12, line 35 through page 13, line 1 as teaching these limitations. Appellant's attorney disagrees. These portions of Lee merely describe sending a message to a teacher's workstation indicating the material the student is having problems with, but they do not teach or suggest the limitations of claim 21.

With regard to claim 22, which recites that "the personalized information includes information about the learner that facilitates teaching," the Office Act cites Lee at page 8, line 26 as teaching these limitations. Appellant's attorney disagrees. These portions of Lee merely describe



that the homework answers are stored with the student name or ID, but they do not teach or suggest the limitations of claim 22.

**IX. CONCLUSION**

In light of the above arguments, Appellants respectfully submit that the cited references do not anticipate nor render obvious the claimed invention. More specifically, Appellants' claims recite novel physical features which patentably distinguish over any and all references under 35 U.S.C. §§ 102 and 103. As a result, a decision by the Board of Patent Appeals and Interferences reversing the Examiner and directing allowance of the pending claims in the subject application is respectfully solicited.

Respectfully submitted,

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## APPENDIX

16. A method of presenting material on a same topic to a learner, comprising:
- (a) storing on one or more computers a plurality of materials including a collection of alternate presentations, each covering the same topic;
  - (b) providing a communications link to the materials, via a data channel, with a communicator of the learner;
  - (c) storing profiles of learners, which contain information about characteristics of each learner including information about each learner's curriculum, teaching strategies, present standing and personalized information;
  - (d) selecting a preferred presentation from the collection of alternate presentations based on the learner's profile; and
  - (e) making the selected presentation to the learner.
17. The method of claim 16, wherein the information about each learner's curriculum substantially determines each learner's needs and the step of selecting the preferred presentation from the collection includes matching the learner's needs with the preferred presentation suited to those needs.
19. The method of claim 16, wherein the information about each learner's teaching strategies includes information on the learner's preferred teaching strategy and the step of selecting the preferred presentation includes selecting the preferred presentation according to the learner's preferred teaching strategy.
20. The method of claim 16, wherein the information about each learner's present standing is ascertained in a non-intrusive, transparent manner, based on a demonstration of a level of competency by the learner.
21. The method of claim 16, wherein the personalized information includes information about difficulties in teaching the learner.
22. The method of claim 16, wherein the personalized information includes information about the learner that facilitates teaching.